Technical Advisor Report

Caragh Clams Ltd. Appeal AP4/2013 Review

DOCUMENT CONTROL SHEET

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A01	Board Approval	A. Douglas V. Campbell C. Gilleran	J. Massey	W. Madden	Galway	4.9.13

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EXECUTIVE SUMMARY

Description:	Renewal of a 10-year Aquaculture Licence and accompanying Foreshore License for the cultivation of clams using trays and mesh in Castlemaine Harbour, Co. Kerry.
Appeal Reference	AP4/3/2013
Licence Application	Site T06/315N1
Department Reference Number	T06/315N1
Applicant	Caragh Clams Ltd
Minister Decision	Granted a 10-year Aquaculture Licence and accompanying Foreshore Licence 03rd May 2013
Appeal	
Type of Appeal	Grant of New Licence
Appellant(s)	(1) Friends of the Irish Environment (2) An Taisce
Observers	None
Technical Advisor	RPS
Site Inspection	N/A

1 APPEAL DETAILS AND OBSERVER COMMENT/SUBMISSIONS

Date Appeal Received: 6th June 2013 - Friends of the Irish Environment

7th June 2013 - An Taisce

Location of Site Appealed: Castlemaine Harbour, Co. Kerry

1.1 APPEAL TIMEFRAME

Publication notice to amend the Aquaculture Licence featured in 'The Kerryman' on Wednesday, 8th May 2013. The appeal was submitted within the statutory timeframe of one month from the date of the publication notice.

1.2 NAME OF APPELLANTS

Table 1.1: Details of the Appellants

Organisation	Name	Address
Friends of the Irish Environment	Caroline Lewis	Kilcatherine, Eyeries, Co. Cork
An Taisce	n/a	The Tailors' Hall, Back Lane, Dublin 8

1.3 NAME OF OBSERVERS

No observations received.

1.4 GROUNDS FOR APPEAL

Friends of the Irish Environment:

- The appellant maintains that in cases of doubt or negative conclusions arising from the Appropriate Assessment the precautionary and preventative principles under Article 6(4) of the Habitats Directive should be applied.

- The appellant states that the integrity of the Castlemaine Harbour Natura 2000 site, which includes estuaries and mud flat habitats listed under Annex I of the Habitats Directive and five species listed under Annex I of the Bird Directive will be impacted should the licence for the cultivation of Manila Clam (*Ruditapes philipanarium*) be approved.

- The appellant provided additional information (as Annex I) on the potential ecological impacts of the non-native *Ruditapes philipanarium* species.

An Taisce:

- **Timing of notification.** The appellant raised concerns that they did not receive notification of the Minster's decision to award Caragh Clams a licence for the cultivation of clams using trays and mesh in Castlemaine Harbour (Natura 2000 site) in sufficient time to consider an appeal - the licence award was announced on 8th May 2013 in the Kerryman newspaper and the appellant did not receive notification of this until 27th May 2013 which is outside of the required 2 week period.

- **Access to information.** Contrary to provisions under the Aarhus Convention the appellant has not been able to gain access to the details of the proposed licence. They advised that they are unable to assess the contents if they were not made publically available.

- **Cost of appeal; and forfeit of fee where oral hearing is requested but not held.** The appellant advised that they received notification of 43 new aquaculture licence approvals in Castlemaine Harbour in two separate letters dates 27th May 2013. They pointed out that the costs of appealing all licences (e.g. €152.37 x 43 = €6551.91) and requesting an oral hearing (e.g. (€152.37 + €76.18) x 43 = €9827.65) are prohibitive. They were also concerned that should a requested oral hearing not go ahead the fee per licence would not be refunded. They claim that both aspects are in breach of the Aarhus Convention.

- **Section 4 of the Fisheries and Foreshore (Amendment) Act, 1998.** The appellant asks that the Board ensures that no aquaculture activity takes place on the site until the licence has been granted.

- **Breach of Habitats Directive.** The Appropriate Assessment (April 2011) did not apply the legal *Waddenzee* Test (European Court of Justice in Case C-127/02) which requires the assessment of the impact of the licensed activity against a Natura 2000 sites conservation objectives. The appellant is concerned that different tests were applied and an incomplete ecological assessment was carried out. The appellants submission therefore consists of (1) the present clam operation (which relies on the mechanical laying and harvesting which is highly intrusive in and of its own right, (2) 42 other licences which were granted for the cultivation of three species of filter feeder – mussel, clam and the invasive non-native Gigas (Pacific) Oyster, (3) predator control, (4) the affects of the hand collection of shellfish by an unknown number of operators, (5) effluent discharge and (5) recreation. This means the Minster should have determined that 'reasonable scientific doubt remains' as to the integrity of the Castlemaine Harbour site. Should the proper legal tests been applied the Minster would be required to apply the derogation in Article 6(4) of the Habitats Directive whereby the project can only go ahead if (a) the is no alternative solution; (b) there are imperative reasons of overriding public interest and (c) compensatory measure are adopted to ensure the Natura 2000 site is protected.

1.5 MINISTERS SUBMISSION

Section 44 of the Fisheries (Amendment) Act 1997 Part 2 states that *'The Minister and each other party except the appellant may make submissions or observations in writing to the Board in relation to the appeal within a period of one month beginning on the day on which a copy of the notice of appeal is sent to that party by the Board and any submissions or observations received by the Board after the expiration of that period shall not be considered by it'*.

The Department of Agriculture, Food and the Marine made a submission to the Aquaculture Licence Appeals Board (ALAB) on the 19th June 2013 in response to the appeal to the Ministerial determination in relation to Caragh Clams application.

- The Department of Agricultures, Food and the Marine (DAFM) advised that the appellants had been notified that the Appropriate Assessment Conclusion Statement for aquaculture activities in the Castlemaine Harbour Natura 2000 site had been placed on the Departments website and sent to all statutory consultees when notifying them of the Minster's determinations.

- DAFM provided a briefing document outlining the Appropriate Assessment findings in response to this appeal. The Appropriate Assessment, which assessed the ecological impacts of fishing and aquaculture activities, in and adjacent to Castlemaine Harbour were based on a draft 5-year mussel fishery Natura plan, which included the intertidal culture of clams, submitted by the Castlemaine Mussel Producers Cooperative to DAFM in March 2011 and bird studies commissioned specifically for the Appropriate Assessment.

- The Appropriate Assessment concluded that full occupation of the current licensed area used by Caragh Clams (ref. T06/300 and T06/315) would remove approximately 25% of the main feeding habitat for the Ringed Plover and Sanderling and displace up to 8% of the populations of these species. These are mitigated by the relocation of the licenced areas to a nearby site (T06/315N1) which is both smaller and less suitable for these species. This relocation will allow full recovery of the previously used sites.

- DAFM states that the proposed licence is fully compliant with Council Regulation (EC) No. 708/2007 concerning the use of alien and locally absent species in aquaculture. An aquaculture operator would normally be required to apply for a permit to introduce alien species, however in this instance this is not required as *Ruditapes philipanarium* has been used in aquaculture for a long time.

1.6 APPLICANT RESPONSE

Section 44 (2) of the Fisheries' Amendment Act 1997 states '*The Minister and each other party except the appellant may make submissions or observations in writing to the Board in relation to the appeal within a period of one month beginning on the day on which a copy of the notice of appeal is sent to that party by the Board and any submissions or observations received by the Board after the expiration of that period shall not be considered by it*'.

A summary of the response received by the Secretary of the ALAB on 17th July 2013 from the licence applicant regarding points raised by the appellant is as follows:

- The applicant advised that although the specific terms and conditions of the new licence have not been made available to them, they are lead to believe that the new site is a reconfiguration of the existing sites and is sub-optimal for protected bird species. This reconfiguration enables the State to meet its obligations under the Birds Directive.

- Caragh Clams advise that they have been cultivating clams in Castlamaine Harbour within the terms of their licence, fish movement and health requirements, food safety regulations and toxin monitoring and control procedures since 2003.

- The applicant states that the procedural and substantive issues raised by the appellants are a matter for the licencing authorities e.g. DAFM and the National Parks and Wildlife Service (NPWS).

- The applicant is unsure why the Friends of the Irish Environment appeal (Annex I) includes reference to the importation of non-native species and 'pump scoop' harvesting method. The applicant advises that they do not engage in either the importation of clam seed or stocks or hydraulic 'pump scoop' dredging to carry out harvesting.

- The applicant advises that the business is an integral part of local community by providing employment and export opportunities. It states that it works closely with regulatory and other

bodies to provide seafood of the highest quality and sees no incompatibility between their activities and the conservation of flora, fauna and habitats.

2 CONSIDERATION OF NON-SUBSTANTIVE ISSUES

Each issue raised by the appellant is considered substantive and has been reviewed.

3 ORAL HEARING ASSESSMENT

In line with Section 49 of the Fisheries Amendment Act 1997 an oral hearing may be conducted by the ALAB regarding the licence appeals.

At this time an oral hearing has not been called nor requested by the appellant or the applicant.

4 MINISTER'S FILE

In line with particulars of Section 43 of the Fisheries Amendment Act 1997 the following documented items were sent to the ALAB from the Minister:

- Copy of Application Forms;
- Copy of Aquaculture Licence with maps, charts, co-ordinates and drawings;
- Copy of Foreshore Licence;
- Copy of EIA Screening Assessment;
- Copy of Submission made to the Minister;
- Copy of Notification to Applicants of Minister's Decision;
- Copy of Advertisement of Minister's Decision;
- Overview Map of Sites in Castlemaine Harbour;
- Copy of Appropriate Assessment and Conclusion Statement.

5 CONTEXT OF THE AREA

5.1 PHYSICAL DESCRIPTION

Site T06/315N1 (**Figure 5.1**), an area of 16.14 hectares, is located in the intertidal area on the south western shore of the Castlemaine Harbour and lies within Castlemaine Harbour Special Area of Conservation (SAC) (Site Code 000343) and Special Protected Area (SPA) (Site Code 004029). Information on exact characteristics of the site has not been provided with the application and a site survey would be required to obtain such information.

Castlemaine Harbour is a large shallow tidal estuary located in the innermost part of Dingle Bay, Co. Kerry, it is approximately 11 km long and 5 km wide, covering an area of over 5,300 ha. Castlemaine Harbour has extensive areas of intertidal sand and mud flats together with expanses of shallow marine water (NPWS, 2011a). Castlemaine Harbour is sheltered from the open sea by three sand spits which protrude into the estuary; Rossbehy and Cromane both extend northwards from the Iveragh Peninsula while Inch extends southwards from the Dingle Peninsula. Two large rivers, the Maine and the Laune, flow into the Harbour as well as a number of other rivers including the Caragh, the Emlagh and the Behy and several small streams. The principal town adjacent to the Harbour is Killorglin with the smaller communities of Castlemaine, Milltown, Cromane, Glenbeigh and Inch (**Figure 5.2**).

The climate of Co. Kerry is influenced by its maritime location which produces considerable rainfall. The annual rainfall average recorded by Met Éireann at the Valentia Observatory off the western coast of the Iveragh Peninsula was 1,557.4 mm[1] for the period 1981 to 2010. Highest mean rainfall during this period was in October with a mean of 177.1 mm, while May had the lowest mean rainfall at 93.5 mm.

Figure 5.1: Location of site T06/315N1 in Castlemaine Harbour

[1] http://www.met.ie/climate/monthly-data.asp?Num=2275

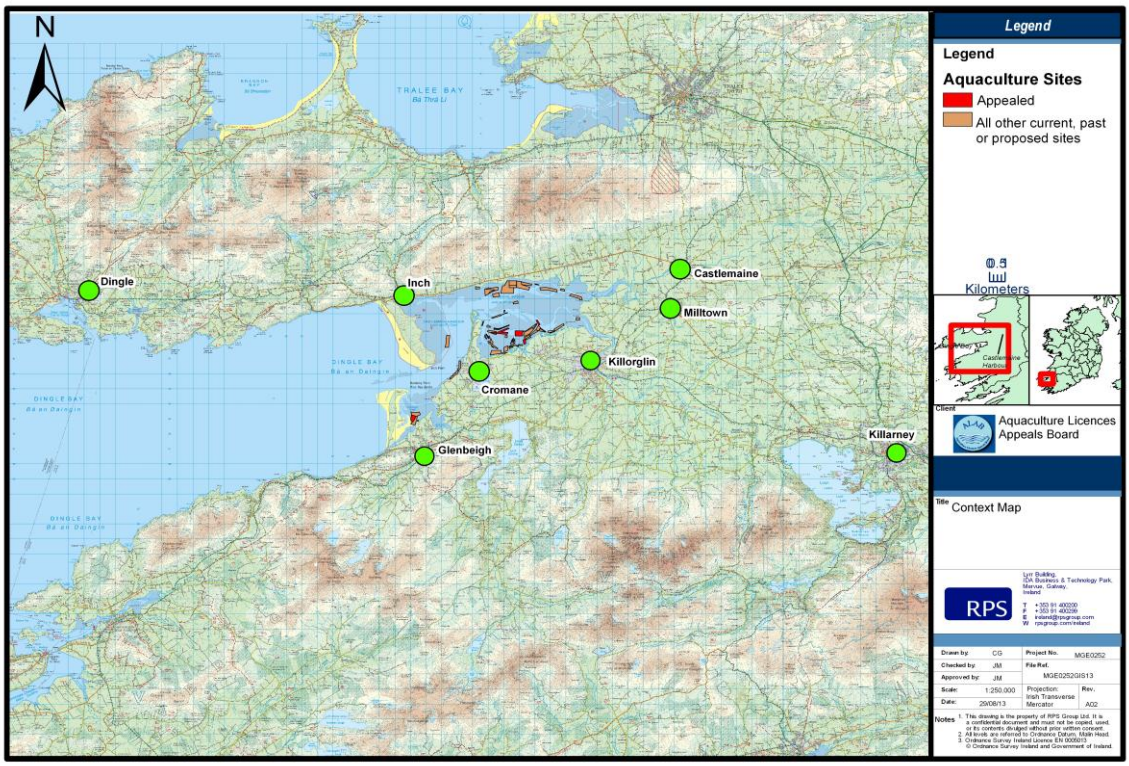

Figure 5.2: Overview of Castlemaine Harbour Area and Significant Population Centres

5.2 PROPOSED ACTIVITY

The application is for an Aquaculture Licence and accompanying Foreshore Licence for the cultivation of clams using trays and mesh. Clam seed are planted in the spring and are placed in nursery trays on-site for approximately 1 year. Within each nursery frame approximately 1 million seeds are planted. As they grow thinning is carried out every 6-8 weeks until they are ready for planting. The seed is only planted directly on the seabed and overlaid with a net on spring tides and no further thinning is carried out. Maintenance and cleaning of the net using brushes towed by a tractor is only carried out on the spring tide when accessible. The average annual clam production in Castlemaine Harbour is 40 tonnes.

5.3 RESOURCE USERS

Aquaculture

Containing one of the largest natural mussel beds in Ireland, shellfish cultivation has a long history in Castlemaine Harbour. Mussels have been exploited in the area since the 1800s and are the predominant, well established farmed species in Castlemaine Harbour (**Figure 5.3).** More recently Pacific Oyster and clam cultivation has commenced in the area (Anon, 2009). The Castlemaine Harbour Cooperative Society serves as a coordinating and representative body for aquaculture activities in Castlemaine Harbour. The Society holds the Mussel Fishery Order granted in 1979 for the

area allowing them control of the allocation of grounds for aquaculture over the 250 acre body of water[2].

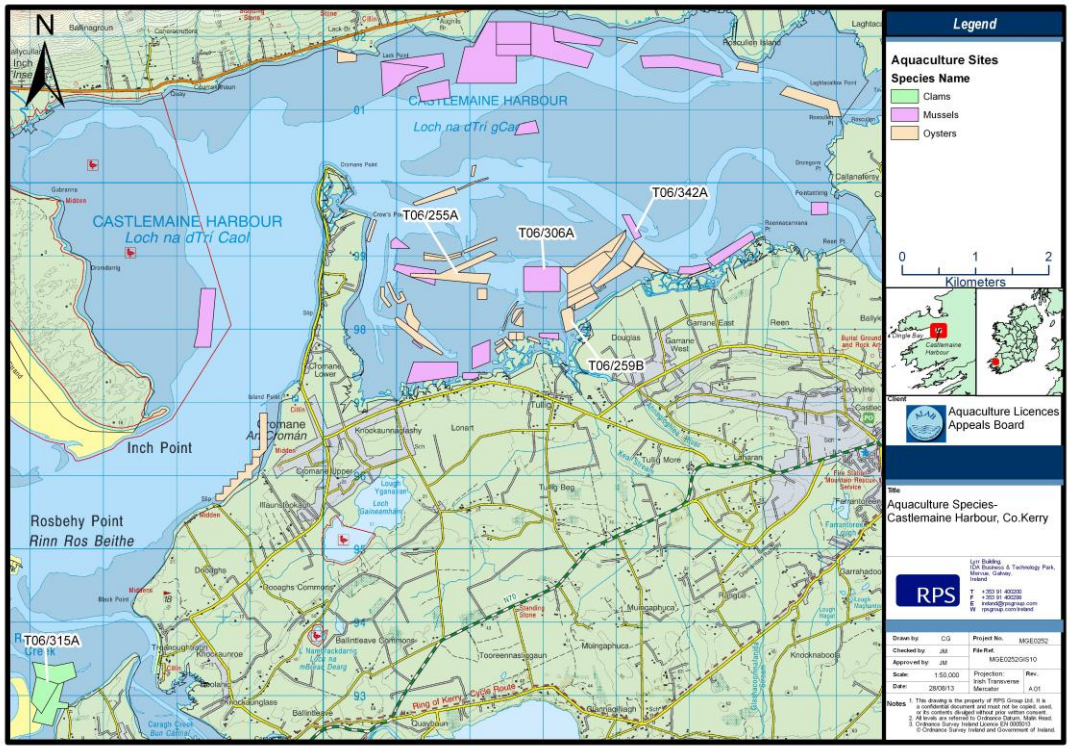

Figure 5.3: Aquaculture Species

At present, there are 50 sites in Castlemaine Harbour that have either existing aquaculture licences which are due for renewal, are at the application stage, have been recently licenced, or are currently under review for appeal (see **Figure 5.4**). The majority of these sites are found on the inner part of Castlemaine Harbour. Individual licenced sites range in size from 0.44 ha to 45 ha. The total area covered by the licenced activities is 372.08 ha (Marine Institute, 2011).

[2] http://www.cromane.net/fishing.htm

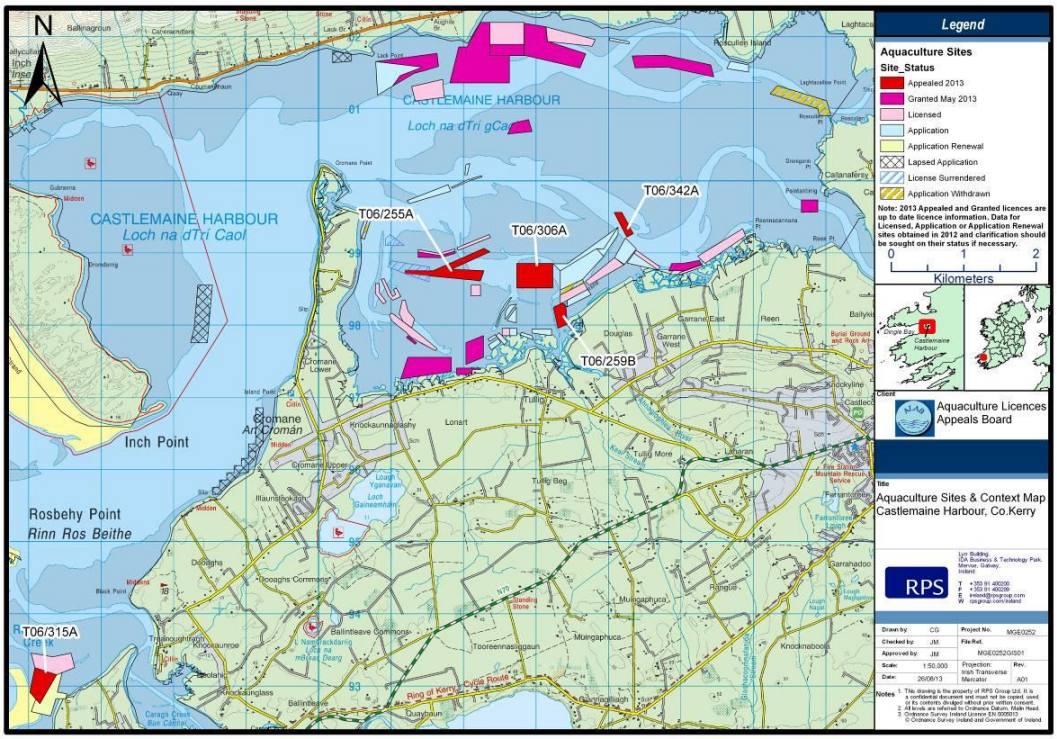

Figure 5.4: Licensing of Sites for Aquaculture Activities

In 1994, a large proportion of the Castlemaine Harbour area was designated as a shellfish area under the European Communities (Quality of Shellfish Waters Regulations) 2004 (**Figure 5.5**). Referred to as the Cromane Shellfish Area, the designated area is 37.6 km^2 in size (**Figure 5.5**).

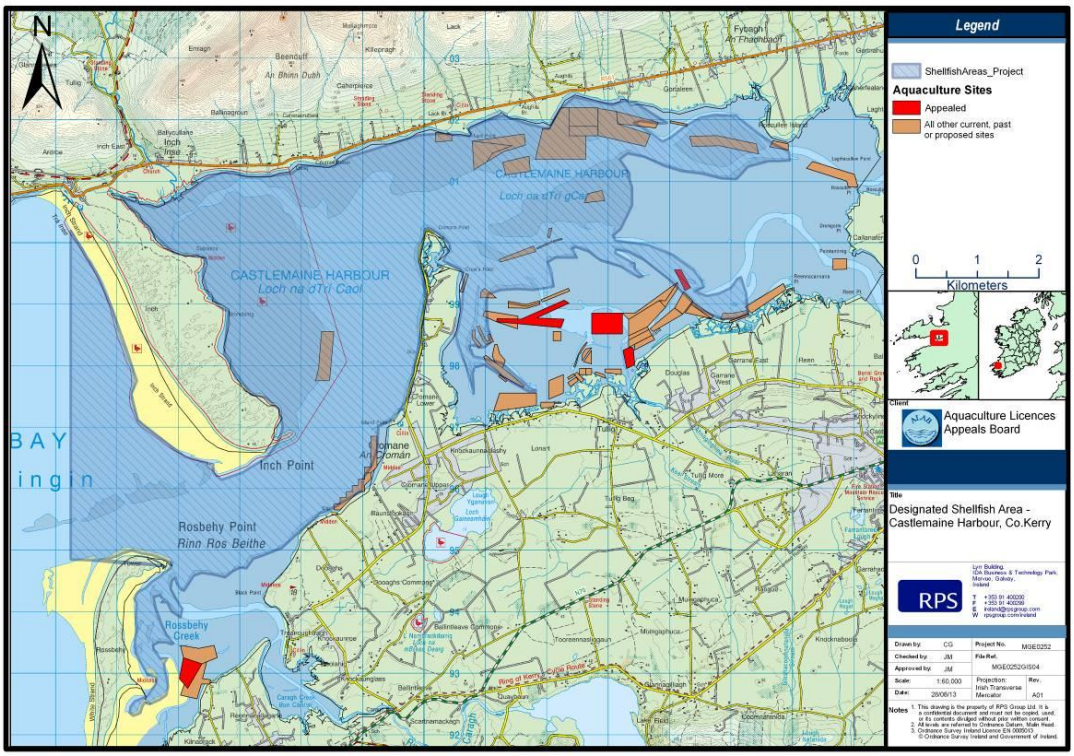

Figure 5.5: Cromane Shellfish Area

Angling

The Dingle Peninsula is a hotspot for shore angling. Angling is largely concentrated in outer Dingle Bay, however, fishing for flounder, bass and plaice occurs within Castlemaine Harbour[3].

Tourism and Recreation

Kerry is a well known international and domestic tourism centre with a varied tourism profile. The tourism industry draws on the county's natural advantages as a highly scenic county to support its continued growth (Kerry County Council, 2009) and is an important contributor to the economic activity of many towns and villages throughout the county.

Glenbeigh is a small village located to the south of Castlemaine Harbour. It is situated in a very scenic area at an intersection of the Kerry Way walking route with the Ring of Kerry route and consequently is a busy tourist destination. It is considered a haven for bird watching due to its varied country-side of marshes, wetlands, estuary, rivers, coastline, mudflats and uplands. Tourism is recognised as one of the more important employment sectors in the village.

Rossbeigh, a small coastal development located approximately 2km from Glenbeigh, is primarily a tourist location. Its fine beach with Blue Flag status, scenic location and availability of outdoor pursuits which include hand-gliding, horse trekking and angling among others, ensures it is a popular destination for tourists. It also supports tourism in Glenbeigh as the proximity of the two settlements allows for a natural pooling of tourist attractions.

Similarly, Killorglin's proximity to Castlemaine Harbour with its Blue Flag beach at Rossbeigh is a key asset in terms of tourism. The town is not reliant on tourism for its economic development, nonetheless, it is considered important that the town and the surrounding area should develop and enhance its tourist potential.

Located over 20km from the nearest aquaculture site, the nearest significant tourism hub is the town of Dingle (**Figure 5.2**) and wider peninsula. The town of Killarney is also an extremely important tourist hub for County Kerry located in land from the aquaculture activity (**Figure 5.2**)**.**

5.4 ENVIRONMENTAL DATA

Water quality in Castlemaine Harbour is monitored as part of the Water Framework Directive (WFD) Monitoring Programme. For the purpose of WFD monitoring Castlemaine Harbour is divided into two transitional water bodies, Castlemaine Harbour and Cromane (**Figure 5.6**). The Castlemaine Harbour water body is located just north of Killorglin. It consists of the mouths of both the River Maine and River Laune as they enter the sea and extends 1km into Cromane Estuary. The Cromane Estuary water body is an extension of Castlemaine Harbour, extending westwards until it reaches the open sea at Dingle Bay. The proposed aquaculture site is located within the Cromane Estuary water body and therefore results for the Castlemaine Harbour water body are not considered in this report.

Water Framework Directive status classifications are generally based on several samples/surveys targeting a variety of parameters including biological, physico-chemical, chemical and hydromorphological elements. Monitoring is carried out by the Environmental Protection Agency (EPA), Marine Institute and Inland Fisheries Ireland.

[3] http://www.fishinginireland.info/sea/southwest/dingle.htm

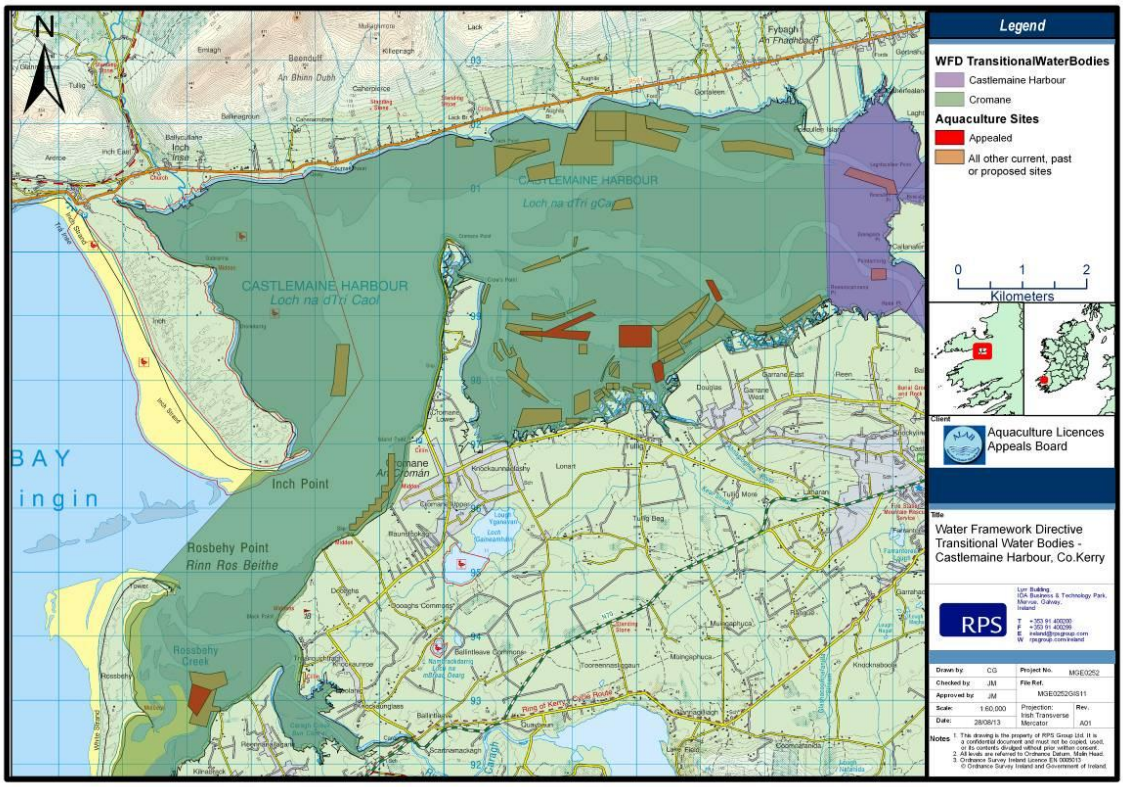

Figure 5.6: WFD Castlemaine Harbour and Cromane Water Bodies

The latest WFD monitoring programme covers the period 2007-2009. Monitoring results indicate that there are water quality issues within the area and the overall status of the Cromane water body is considered only 'moderate'. The water quality issues are largely related to unsatisfactory dissolved oxygen (DO) concentrations and phytoplankton biomass (EPA, 2010). A status update report for Irish surface and groundwaters based on monitoring results for the period 2007-2009 reported similar DO issues for the Cromane water body (EPA, 2011).

Similar water quality issues were reported in the Cromane Shellfish Area Pollution Reduction Programme. Monitoring results for the period 2005 – 2008 indicated that elevated levels of DO and Biological Oxygen Demand (BOD) were the major contributors to the water body achieving only 'moderate' status.

Bathing Water Quality

Bathing water quality is not monitored in Castlemaine Harbour. The nearest locations at which water quality is monitored is at Rossbeigh (White Strand) and Inch Strand, located immediately outside the Harbour. In 2012 water quality results were found to comply with both EU guide and mandatory values indicating that water is of 'good' quality status at these locations. These results were achieved despite a remarkably wet summer which saw the south and southwest have record breaking rainfall figures which was the cause of the reduction in the number of waters achieving "Good" status. The prolonged rain resulted in saturated soils increasing the pollution run-off from agricultural land, particularly where livestock were being grazed or animal manures being spread, and also urban runoff from roads/ pavements etc (EPA, 2013).

5.4.1 Biotoxicology

The monitoring of biotoxins in shellfish and the analysis of seawater for the presence of toxin producing phytoplankton is carried out all year round by the Marine Institute. Shellfish samples are taken from three strategically placed sampling points in the Cromane shellfish production area (**Figure 5.7**). Water samples are taken from a single sampling point (KY-CH-BF).

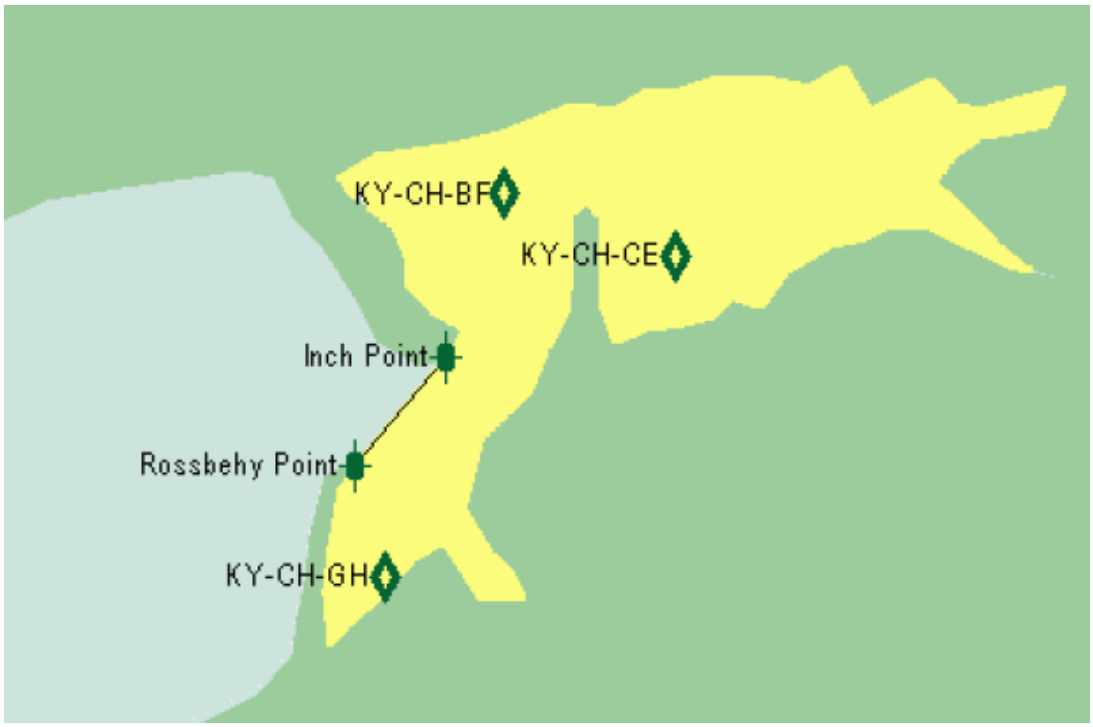

Figure 5.7: Shellfish and water sampling points in the Castlemaine Harbour Shellfish Production Area (Marine Institute, 2012)

Shellfish sampling results for the period 1/6/2013 to 12/8/2013 indicated that levels of biotoxins detected in Blue Mussel (*Mytilus edulis*) and Pacific Oyster samples were consistently below regulatory limits.

In August 2013, the diatom Pseudo-nitzschia sp., a producer of the Amnesic Shellfish Poisoning toxin domoic acid, was detected in Castlemaine Harbour. However, its presence had no impact on aquaculture operations and the area remained open for harvesting.

5.4.2 Benthic Habitats

Castlemaine Harbour has extensive areas of intertidal sand and mud flats together with expanses of shallow marine water. Much of the intertidal sediment is comprised of muds or muddy sands. Benthic communities consist of high densities of polychaete worms such as Ragworm (*Hediste diversicolor*) and Lugworm (*Arenicola marina*), along with a variety of bivalves and molluscs (NPWS, 2010a).

Aquaculture activities in Castlemaine Harbour overlap with habitats of conservational interest (Estuaries and Mud and sand flats not covered by seawater at high tide), as designated under the Habitats Directive.

The distribution of intertidal communities within the Harbour is closely related to exposure levels and sediment types. The rivers Laune, Maine and Caragh have a strong influence on the distribution of estuarine communities within the Harbour. **Table 5.1** and **Table 5.2** outlines the species and habitats

of conservational interest and the communities associated with mudflat and sandflat that are not covered by seawater at low tide and estuaries in Castlemaine Harbour.

The mud and sandflats provide important habitat for marine birds as well as habitats of particular conservational interest such as seagrass beds, mussel beds and cockle beds.

5.5 STATUTORY STATUS

Castlemaine Harbour is of major ecological importance. It is a designated SAC under the EU Habitats Directive (**Figure 5.8**). It contains a range of coastal habitats of excellent quality many of which are listed on Annex I of the Directive. It also includes long stretches of river and streams which are ideal habitats for Salmon, Lamprey and Otter. It supports dune systems which are recognised as among the finest in the country. The Harbour supports internationally important waterfowl populations, rare plants, the rare Natterjack Toad and populations of several animal species that are listed on Annex II of the Directive (NPWS, 2006).

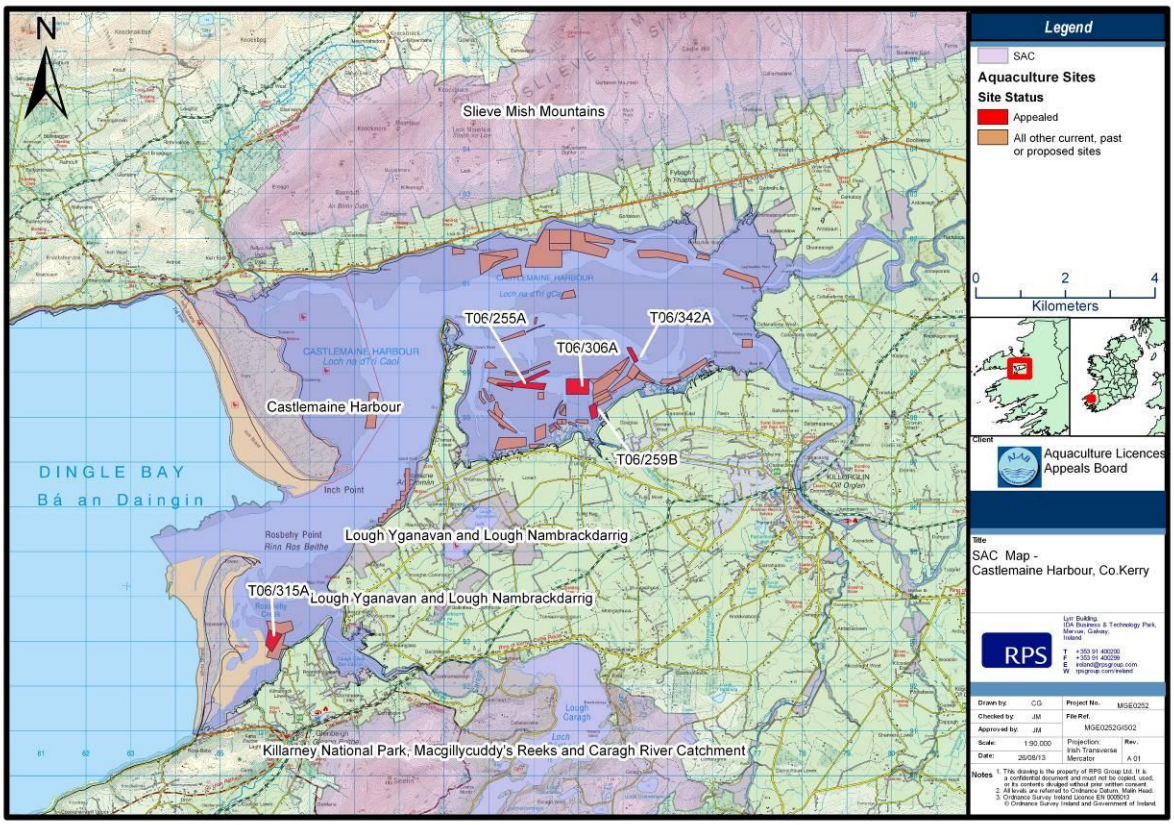

Figure 5.8: Castlemaine Harbour SAC

Part of the site is also designated a SPA under the EU Birds Directive (**Figure 5.9)** and is listed as a site under the Ramsar Convention. It is of special conservation interest for the species listed in **Table 5.1** below. It is one of the most important sites for wintering waterfowl in the south-west. It provides habitats for a wide diversity of waterbirds, including divers and seaduck (NPWS, 2006).

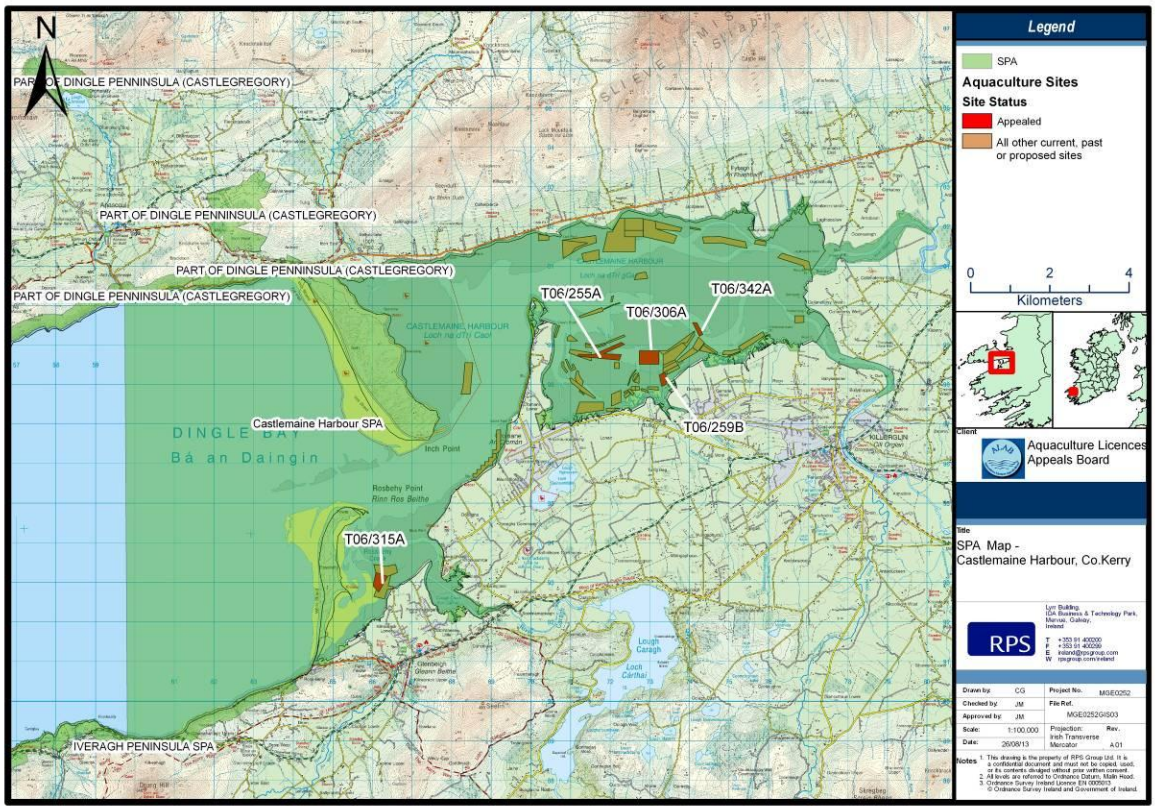

Figure 5.9: Castlemaine Harbour SPA

Table 5.1: SAC and SPA sites within which the proposed aquaculture site is located and features for which they are designated

Designated Sites	Qualifying Features (EU Importance)
Castlemaine Harbour SAC (Site Code: 000343)	Sea lamprey (*Petromyzon marinus*) River lamprey (*Lampetra fluviatilis*) Salmon (*Salmo salar*) Estuaries Mudflats and sandflats not covered by seawater at low tide Annual vegetation of drift lines Perennial vegetation of stony banks Salicornia and other annuals colonizing mud and sand Spartina swards (*Spartinion maritimae*) Atlantic salt meadows (*Glauco-Puccinellietalia maritimae)* Otter (*Lutra lutra*) Petalwort (*Petalophyllum ralfsii*) Mediterranean salt meadows (*Juncetalia maritimi*) Embryonic shifting dunes Shifting dunes along the shoreline with Ammophila arenaria (white dunes) Fixed coastal dunes with herbaceous vegetation (grey dunes) Dunes with Salix repens ssp.argentea (*Salix arenariae*) Humid dune slacks Alluvial forests with Alnus glutinosa and Fraxinus excelsior (*Alno-Padion, Alnion incanae, Salicion albae*)
Castlemaine Harbour SPA (Site Code: 004029)	Red-throated Diver (*Gavia stellata*) Cormorant (*Phalacrocorax carbo*) Light-bellied Brent Goose (*Branta bernicla hrota*) Wigeon (*Anas penelope*)

	Mallard (*Anas platyrhynchos*) Pintail (*Anas acuta*) Scaup (*Aythya marila*) Common Scoter (*Melanitta nigra*) Oystercatcher (*Haematopus ostralegus*) Ringed Plover (*Charadrius hiaticula*) Sanderling (*Calidris alba*) Bar-tailed Godwit (*Limosa lapponica*) Redshank (*Tringa totanus*) Greenshank (*Tringa nebularia*) Turnstone (*Arenaria interpres*) Chough (*Pyrrhocorax pyrrhocorax*) Wetlands & Waterbirds

Conservation Objectives for the SAC

NPWS (2010b) describe the conservation objectives for all qualifying interests of the SAC. The proposed aquaculture activity overlaps with habitat 1130 (Estuaries) and 1140 (Mud and sand flats not covered by seawater at high tide) in particular.

Estuaries and Mud and sand flats not covered by seawater at high tide:

In the case of these habitats the important attributes that must be conserved are Habitat area and Habitat structure and function.

Habitat area: The likely area occupied by the constituent communities of Habitats 1130 and 1140 should be stable or increasing with overall target areas of 5, 696 ha and 4, 287 ha respectively.

Habitat structure and function: The communities of habitats 1130 and 1140 should be stable in distribution and composition.

Table 5.2: Communities within Mudflat and Sandflat not covered by seawater at low tide, and Estuaries in Castlemaine Harbour (NPWS, 2011)

	Community	Characterising species
Mudflat and sandflat are not covered by seawater at low tide	Intertidal muddy fine sand community complex	*Tharyx sp A* *Polydora cornuta* *Gammarus locusta* *Macoma balthica* *Hediste diversicolor* *Corophium volutator* *Heterochaeta costata* *Pygospio elegans* *Crangon crangon*
Mudflat and sandflat are not covered by seawater at low tide / Estuaries	Fine to muddy fine sand with polychaetes community complex	*Pygospio elegans* *Eteone longa* *Scoloplos armiger* *Spio martinensis* *Macoma balthica* *Capitella capitata* *Angulus tenuis*
Mudflat and sandflat are not covered by seawater at low tide / Estuaries	Intertidal sand with *Nephtys cirrosa*	*Nephtys cirrosa* *Bathypoeia pilosa* *Scolelepis squamata*

Mudflat and sandflat are not covered by seawater at low tide / Estuaries	*Zostera* dominated community	*Zostera sp.*
Estuaries	Mixed sediment community complex	*Mytilus edulis* *Corophium acherusicum* *Caprella acanthifera* *Pholoe synophthalmica* *Nemertea indet* *Pomatoceros lamarckii* *Microprotopus maculates* *Abludomelita obtusata* *Amphipholis squamata* *Jassa pusilla* *Eumida sanguine* *Nephtys cirrosa* *Ammothella longipes* *Angulis tenuis* *Gastrosaccus spinifer*
	Fine sand with *Donax vittatus* and polychaetes community	*Donnax vittatus* *Spiophanes bombyx* *Magelona mirabilis etc.* (source: Marine Institute, 2011)

Conservation Objectives for the SPA

NPWS (2010b) also describes the conservation objectives and targets for species of waterbirds and the wetlands which support them.

1. Population trends and distribution, as measured by the % change in population size and the numbers of birds and range of areas used, should be stable or increasing.

2. The area of subtidal, intertidal and supratidal habitats should be stable or increasing and not less than the areas of 7,471, 3,983 and 312 hectares for subtidal, intertidal and supratidal habitats, respectively other than that occurring from natural patterns of variation.

5.6 CASTLEMAINE HARBOUR SPECIES RECORDS

5.6.1 Cetaceans

Cetaceans have been commonly recorded around Dingle Bay, however, no recent sightings have been recorded within Castlemaine Harbour (IDWG, 2012).

5.6.2 Birds

Table 5.3 presents waterbird population data for Castlemaine Harbour SPA. The five-year average for the baseline period (1995/96 – 1999/00) is reported alongside the most recent five-year average (2005/06 – 2009/10). To allow calculation of the recent five-year average, the dataset comprises Irish Wetland Bird Survey (I-WeBS) data for the period 2005/06 – 2008/09 and count data from the high tide count undertaken as part of the 2009/10 waterbird survey programme. Averages are based on annual peak counts from I-WeBS, a survey undertaken on the high tide (NPWS, 2011a).

Table 5.3: Site population data for waterbird Special Conservation Interest Species of Castlemaine Harbour SPA (NPWS, 2011a)

Species	Baseline populations	Recent site average (2005/06-2009/10)
Light-bellied Brent Goose	694 (i)	535 (i)
Wigeon	6,819 (n)	341
Pintail	145 (n)	133 (n)
Common Scoter	3,637 (n)	n/c
Red-throated Diver	56 (n)	n/c
Ringed Plover	206 (n)	101
Sanderling	335 (n)	468 (n)
Bar-tailed Godwit	397 (n)	163 (n)
Mallard	487 (n)	149
Scaup	74 (n)	6
Cormorant	135	48
Oystercatcher	1035 (n)	629
Greenshank	46 (n)	18
Redshank	341 (n)	380 (n)
Turnstone	144 (n)	64

(i) denotes numbers of International importance; (n) denotes numbers of all-Ireland importance; n/c = not calculated.

5.6.3 Harbour Seals

In Ireland, harbour seals (*Phoca vitulina*) are protected under the Wildlife Acts (1976 and 2000) and are listed under Annex II of the Habitats Directive as species of Community Interest, whose conservation requires the designation of SACs. Castlemaine Harbour is known to support a small colony of harbour seals. The last survey in Castlemaine Harbour was in 1978 when a total of 3 harbour seals were recorded. Although there are no recent surveys for the Harbour, a sighting of a seal 24 km inland from the coast in the lakes of Killarney in March 2013 is thought to have migrated *via* the River Laune from Castlemaine Harbour (Lucey, 2013). This suggests that harbour seals continue to occur in the area.

5.6.4 Otter

The Otter (*Lutra lutra*) is protected under the Irish Wildlife Acts (1976 and 2000) and is also listed in Annexes II and IV of the Habitats Directive. It is listed as one of the qualifying features of interest in the Castlemaine SAC. National surveys of otter in Ireland in 2006 found that approximately 75% of sites surveyed in the south-west of Ireland showed signs of otter occupancy. There is no specific data on otter population size in Castlemaine Harbour although they are known to be present throughout the area (Bailey and Rochford, 2006).

5.6.5 Salmon

Salmon populations run into the Rivers Laune and Maine. Numbers of adult salmon returning to the River Laune increased between 2004 and 2007. Scientific advice from the Standing Scientific Committee on Wild Salmon Stocks 2010 indicated a surplus over and above the conservation limit is required to enable optimum levels of spawning. In the River Maine there was no estimated surplus (Marine Institute, 2011).

5.6.6 Sea Lamprey and River Lamprey

In Ireland, the Sea Lamprey (*Petromyzon marinus*) and River Lamprey (*Lampetra fluviatilis*) are listed under Annex II of the Habitats Directive. Both species are listed as qualifying interest in Castlemaine

Harbour however there is no specific data on populations of Sea Lamprey or River Lamprey in Castlemaine (Marine Institute, 2011).

5.6.7 Natterjack Toad

This species is listed in the Irish Red Data Book and under Annex IV of the Habitats Directive. The vicinity of Castlemaine Harbour is one of the few areas in Ireland where the Natterjack Toad (*Epidalea calamita*) occurs naturally. The Natterjack Toad was once more widespread in Kerry, however, its range decreased substantially between the period 1800 to 1970. The most significant loss in range occurred around Castlemaine Harbour where historic records indicate that the species was previously found right around its coastal strip. Although the toad's range has not changed much since the 1970's, some toad populations are now isolated which may, subsequently, lead to reduced genetic diversity, local inbreeding and, eventually, population extinction. Schemes aimed at restoring suitable breeding and foraging habitats for the natterjack around Castlemaine Harbour have been introduced (NPWS, 2007).

5.7 STATUTORY PLANS

There are no specific statutory or development plans for Castlemaine Harbour. Aquaculture is, however, considered under the Kerry County Development Plan and the development plans for the neighbouring land area of Castlemaine.

5.7.1 Kerry County Development Plan

Kerry's County Development Plan 2009 to 2015 sets out an overall strategy for the proper planning and sustainable development of the county.

With regard to aquaculture, the Plan recognises the economic importance of the aquaculture industry in the county. It acknowledges the potential for the aquaculture sector to expand and sets out to support the further development of aquaculture in Kerry. The overall objective with regard to aquaculture is to:

"Support and promote the sustainable development of the aquaculture sector in order to maximize its contribution to employment and growth in coastal communities and the economic well-being of the County."

The Plan, however, also acknowledges that the coastline of the county is a key attribute in its tourism offering with the scenic quality of the area a keystone to the county's tourism industry. It appreciates that the quality of the natural environment must be protected from improper development and protecting the environment is core to the County Development Plan with objectives for the protection and enhancement of natural areas.

Aware that equipment associated with aquaculture operations such as cages, colourful buoys and markers tend to make developments visually obtrusive, as these developments are located in areas of high amenity value, Kerry County Council propose to put in place a framework that accommodates the various and diverse interests who use the coastal areas including aquacultural interests. This framework will form part of the Kerry County Council's integrated coastal management strategy.

5.7.2 Local Area Plan – Castlemaine

The Castlemaine Town Local Area Plan[4] makes little reference to the aquaculture industry of the area except that oyster/mussel beds form an important part of the local economy.

The Plan recognises the importance that development proposals must "*not adversely impact on Natura 2000 sites, either by way of water pollution, wildlife disturbance or otherwise*".

5.8 MAN-MADE HERITAGE

According to the 'Archaeological Survey of Ireland'[5], there are a number of land-based features of archaeological and architectural interest in the wider surrounding area of Castlemaine Harbour. Two heritage remains are located in close proximity to T06/315N1. These are:

Midden's – Rossbehy

Rossbehy Spit is an irregularly shaped, elongated promontory that projects northwards into Dingle Bay. Two middens can be found on the eastern side of the spit. Midden A occurs as a deposit of shells and stone and measures 8.9 m x 3.8 m. It averages 0.2 m think and occurs below 1.3 m of sand. Midden B is a small cockle, oyster and mussel shell deposit measuring 2.1 m long and 0.1 m think.

4 http://www.kerrycoco.ie/en/allservices/planning/localareaplans/localareaplans/drafttraleekillarneyhubfunctionalarealap/thefile,8177,en.pdf

5 http://webgis.archaeology.ie/NationalMonuments/FlexViewer/

6 SECTION 61 ASSESSMENTS

Section 61 of the 'Fisheries Amendment Act 1997' specifies the following matters to which the licencing authority shall have regard to when an appeal regarding an aquaculture licence is being considered.

6.1 SITE SUITABILITY

Access to the site is already in place.

*The site under appeal **is** suitable for the intended purpose for the following reasons:*

- Castlemaine Harbour has previously been selected for aquaculture operations. The harbour's relatively high tidal range coupled with strong tidal streams reduces the risk of accumulations of waste beneath site infrastructure.

- The selected site (T06/315N1) is adjacent to the two current licenced areas (T06/300 and T06/315). The new area is smaller than the existing two licenced areas.

- The site is located in close proximity to purification facilities.

- The site is located in an area of already high aquaculture activity and any visual impact incurred by this individual site is therefore considered negligible.

6.2 RESOURCE USERS

- Much of the recreational activity around Castlemaine Harbour is shore-based and is concentrated in the outer harbour area at Rossbeigh Beach and Glenbeigh. Therefore, the proposed aquaculture activity is unlikely to impact other recreational users.

- While fishing is known to occur in Castlemaine Harbour its extent is unknown. Given the scale of the proposed activity, however, it unlikely to impact fishing activity in the harbour.

- With regard to the aesthetic quality of the land and seascape around the harbour, the site of the proposed aquaculture activity is located in an area of already high aquaculture activity and any visual impact incurred by an individual site of this scale is considered negligible.

*The proposed aquaculture activity will have **no significant impact** on the possible other users of the area*

6.3 STATUTORY STATUS

There are no specific statutory or development plans for Castlemaine Harbour. Aquaculture is, however, considered under the Kerry County Development Plan and the development plans for the neighbouring land-based area of Castlemaine.

- A core objective of the Kerry County Development Plan is the protection of natural areas while the Castlemaine Local Area Plan stresses that developments must not adversely impact on Natura 2000 sites, either by way of water pollution, wildlife disturbance or otherwise. With site T06/315N1 located within an SAC and SPA, the culture of clams has the potential to impact the ecological integrity of the designated sites. However, the outcome of an Appropriate Assessment of the

impacts on the Conservation Objectives of the SAC and SPA indicate that impacts will not be significant.

- The proposed aquaculture activity is a positive step towards satisfying the Kerry County Development Plan objective to support the further development of aquaculture in Kerry.

- Equipment (i.e. cages, colourful buoys and markers) associated with the proposed aquaculture activity has the potential to impact the scenic quality of the area. However, as the site is located in an area with relatively high aquaculture activity, any potential aesthetic impacts of the development are negligible.

*The proposed aquaculture activity will have **no significant impact** on the statutory status of the area*

6.4 ECONOMIC EFFECTS

Aquaculture as a local economic activity provides small-scale full-time and part-time employment – usually in the low single digits per site. As the demand for cultured products increases there are domestic and overseas opportunities for these local enterprises. The aquaculture industry in Ireland is one of the marine sectors targeted for expansion under the Marine Plan for Ireland (Inter-Departmental Marine Coordination Group, 2012) and Food Harvest 2020 (DAFF, 2010).

If permitted, this proposed aquaculture activity would:

- Allow a local producer to provide employment opportunities to local people;

- Expand already established export markets e.g. France and Holland; and

- Continue to provide local restaurants and shops with locally grown produce.

If this proposal ***is not permitted***:

- The area is already designated a shellfish growing area and employment will be lost;

- Infrastructure already in place will not be used; and

- There will be a failure to supply already established export markets,

*The proposed aquaculture activity **is likely to have a positive effect** on the economy of the area.*

6.5 ECOLOGICAL EFFECTS

6.5.1 Benthic Communities

The intertidal cultivation of clams using trays and mesh at this site may lead to changes in sediment and benthic communities in the area in which they occur.

High densities of filter-feeding shellfish can lead to an increase in organic and silt load to the benthic habitats through the egestion of faeces and pseudofaeces. The accumulation of organic matter can affect the seabed below aquaculture operations. Such effects can be significant in large (hectares)

cultivated areas (Nugues *et al*. 2008), however, given the proposed scale of cultivation at T06/315N1, the effects are likely to be minor and limited to the area directly beneath the clam trays and mesh. This conclusion is further supported by the fact that predominant substrate type in the culture area is sand (suggesting some degree of flushing) and the communities are tolerant of organic loading (e.g. *Pygospio elegans* and *Eteone longa*). In addition the tidal range in Castlemaine is relatively high (3.9m on Spring tides and 1.8m on Neap tides). This combined with the strong tidal streams experienced in the Harbour indicate that water movement is high in the Harbour will serve to reduce the risk of accumulations of organic matter beneath the trays and mesh (Marine Institute, 2011).

Access to site T06/315N1 will be by boat. Clam culture sites are generally visited on spring tides for planting and maintenance and also every 6-8 weeks for thinning. The level of foot traffic would therefore be considered very light. Tyler-Walters and Arnold (2008) conclude that in communities found in the intertidal sediments (muddy-sand), similar to those found in Castlemaine, would have low sensitivity to the light foot traffic experienced at the clam culture site.

The ecological issues that can arise in relation to the culture of clams primarily relate to the intrusive harvesting techniques. This can cause changes to the sediment and non-target benthic organisms which can take up to 4 and 12 months respectively to recover. Plots covered by meshes in sandy silt substrates can also lead to localised sedimentation and increase the organic content in the sediment. Generally the effects disappear once the netting is removed.

The general conclusion is that the culturing of clams using trays and mesh in the intertidal areas in Castlemaine Harbour SAC is not a disturbance on intertidal mudflat and sand flat habitats as well as estuarine habitats.

*The proposed aquaculture activity is **unlikely to have a significant impact** on benthic communities*

6.5.2 Designated Sites

An Appropriate Assessment of Castlemaine Harbour SAC and SPA assessed the potential ecological impacts of (wild) fishing and aquaculture activities on the conservation features of the designated sites. The main conclusions of the Appropriate Assessment in relation to effects of intertidal clam cultivation on SAC qualifying features are outlined in **Table 6.1**.

Table 6.1: Potential Effects of Clam Cultivation on the Castlemaine Harbour SAC Qualifying Interests

Natura 2000 site	Qualifying features (EU Importance)	Potential Impact
Castlemaine Harbour SAC Site Code: 000343	Sea lamprey River lamprey	Shellfish production activity will not have any effect on the following Sea Lamprey and River Lamprey attributes: • Access to spawning (freshwater) • Extent of anadromy (% of river accessible) • Availability of juvenile habitat (freshwater 3rd order channels) • Spawning beds (freshwater) • Juvenile density (freshwater) • Population structure of juveniles (freshwater)

		• Extent of spawning bed habitat (freshwater) ***No** impact anticipated.*
	Salmon	Shellfish production activities do not pose any risk to the following salmon attributes • Distribution (in freshwater) • Fry abundance (freshwater) • Population size of spawners (fish will not be impeded or captured by the proposed activity) • Smolt abundance (out migrating smolts will not be impeded or captured by the proposed activity) • Water quality (freshwater) ***No** impact anticipated.*
	Otter	Shellfish production activities are unlikely to pose any risk to otter populations through entrapment or physical injury. Disturbance associated with vessel and foot traffic has the potential to affect the distribution of otters at the site. However, the level of disturbance is likely to be very low. ***Non-significant** impact anticipated.*
	Estuaries	The area for intertidal relaying overlaps with 0.3% of this habitat type (habitat code 1140). The main communities found in intertidal sands are polychaetes community complex. The % overlap of activity with the habitat and community is below 10% and 15% respectively. ***Minor** impact may be anticipated.*
	Mudflats and sandflats not covered by seawater at low tide	The main communities found in intertidal sands are polychaetes community complex. The % overlap of activity with the habitat and community is below

		10% and 15% respectively. ***Minor** impact may be anticipated.*
	Petalwort Annual vegetation of drift lines Perennial vegetation of stony banks Salicornia and other annuals colonizing mud and sand Spartina swards Atlantic salt meadows Mediterranean salt meadows Embryonic shifting dunes Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes) Fixed coastal dunes with herbaceous vegetation (grey dunes) Dunes with Salix repens ssp.argentea Humid dune slacks Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior*	There is no spatial overlap between the qualifying interest and proposed activity and therefore no impact is deemed possible. ***No** impact anticipated.*

The deposition of clam bags, and associated vehicular activity, may reduce the availability of intertidal habitat for feeding waterbirds and/or cause disturbance to waterbirds. The main conclusions of the Appropriate Assessment in relation to the potential effect of clam cultivation on SPA qualifying features are outlined in **Table 6.2**.

Table 6.2: Potential Effects of Clam Cultivation on the Castlemaine Harbour SPA Qualifying Interests

Species	**Parameter**	**Potential impacts**
Pintail, Scaup, Common Scoter, Red-throated Diver, Cormorant and Bar-tailed	Population distribution and size	Do not occur, or occur in very low numbers (Cormorant and Bar-tailed Godwit) in the Rossbehy Creek area. ***No** impact anticipated.*

Godwit		
Light-bellied Brent Goose, Wigeon, Mallard and Greenshank	Population distribution and size	Appears to show, or considered likely to show (Greenshank), neutral response to clam beds. ***No** impact anticipated.*
Oystercatcher, Redshank and Turnstone	Population distribution and size	Shows neutral/positive (Oystercatcher and Redshank) or positive association with clam beds. ***No** impact anticipated.*

6.5.3 Natterjack Toad

In Castlemaine Harbour the Natterjack Toad is found in coastal dunes and marshes, bog systems and in wet fields near the sea. As none of these habitats overlap spatially with the proposed activity, no impact is deemed possible.

*The proposed development **will not impact** on Natterjack Toads (Epidalea calamita) populations*

6.6 GENERAL ENVIRONMENTAL EFFECTS

Use of natural resources:

The proposed cultivation of clams on the foreshore will use naturally occurring marine phytoplankton present in seawater.

Production of waste:

The cultivated shellfish will produce faeces and pseudofaeces. Grading and removal of mortalities will result in shells being discarded. Nets and trays associated with the growing process may need to be replaced or discarded.

Pollution and nuisances:

Emissions will be burnt by burning fuel in tractor engines and other machinery used in husbandry and harvesting operations. There will be no releases to the air of other hazardous, toxic or noxious pollutants.

Noise and vibration or release of light:

There will be noise associated with husbandry and harvesting of the shellfish e.g. use of tractors/boats and other machinery.

*Taking all of the above into account it is considered that the environmental effects of the proposed aquaculture activity are **not likely to be significant**.*

6.7 EFFECT ON MAN-MADE HERITAGE

There are no significant heritage features present in the vicinity of site T06/315N1.

*There are **no effects anticipated** on the man-made heritage of value in the area as a result of the proposed operation.*

7 RECOMMENDATIONS

In accordance with Section 59 of the Fisheries (Amendment) Act 1997 the Technical Advisor recommends that the licence be granted for the site reference number T06/315N1 for the following reasons and considerations:

- The Technical Advisor has found that the tests applied during the Appropriate Assessment process to habitats, benthic species and birds were satisfactory. Although there is an overlap with qualifying habitats and species with clam cultivation techniques, the interaction levels are believed to be sufficiently low and not thought to have a significant impact on the conservation objectives for the Castlemaine Harbour SAC and SPA;

- The Technical Advisor agrees that proposed stocking densities are sufficient however, should Caragh Clams operations expand in the future it is recommended that a full environmental assessment take place alongside a cumulative assessment of all aquaculture operations in Castlemaine Harbour SAC and SPA;

- Due to the increasing number of licenced aquaculture operations in the Castlemaine Harbour SAC and SPA an aquaculture management plan (finfish and shellfish) is recommended;

- The Technical Advisor recommends that Caragh Clams operates according to European best practice.

8 CONCLUSIONS

The site under appeal is suitable for the intended purpose.

- The proposed aquaculture activity will have ***no significant impact*** on other possible users of the area;
- The proposed aquaculture activity will have ***no significant impact*** on the statutory status of the area;
- The proposed aquaculture activity will have a ***positive effect*** on the economy of the area.
- The proposed aquaculture activity will have ***no significant effects*** on wild fisheries, natural habitat and fauna provided effective controls and monitoring protocols are adhered to;
- There are ***no significant environmental effects*** expected as a result of the proposed aquaculture activity;
- The licencee should operate in line with best European industry practice; and
- There are ***no effects*** anticipated on the man-made heritage value in the area as a result of the proposed aquaculture activity.

The proposed aquaculture activity will have a positive effect on the Castlemaine economy by securing jobs and maintaining established export markets.

Taking all other available information into account it would appear the facility would pose an insignificant impact on the environment, statutory status and man-made heritage value of the area.

The Technical Advisor recommends the decision to grant a licence.

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